Chapter 16
Polk State College's Engineering Technology OEEE Associate's Degree

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ABSTRACT

This case study describes an Open Entry Early Exit (OEEE) program focused on untangling the web of systems, assumptions, roles, relationships, and interagency processes to address the national emphasis on affordable, compressed and flexible degree attainment, particularly in science, technology, engineering, and math (STEM) talent gap areas. To this end, Polk State College has empowered non-traditional students with an affordable, accessible option that was initiated as a result of a National Science Foundation's Advanced Technological Education (NSF-ATE) project award. The project was designed to transition a traditional Engineering Technology Associate in Science degree program to a hybrid competency-based, modular, non-term, self-paced, learner-centered, faculty-mentored format. As a work in progress, the OEEE program team has undertaken and resolved numerous challenges, many of which are still emergent, and identified significant breakthroughs to provide a catalyst to the reconceptualization of higher education.

INTRODUCTION

Polk State College has served as the primary access point to higher education for residents of Polk County, Florida since its inception in 1964. Today the College serves over 24,000 students at two campuses and four centers located throughout the county, offering Associate -in Arts, Associate in Science, Bachelors, and certificate/workforce training options. Although flanked by Orlando to its east and Tampa

to its west, people are surprised to learn that Polk County has the 11th highest poverty rate and the 6th lowest two-year degree attainment rate of the one-hundred most populous metropolitan statistical areas in the nation (Kneebone & Holmes, 2014). Miles of citrus groves, commercial farms, nature preserves, and fresh-water lakes are a haven for tourists, but for most residents they provide little opportunity for jobs that pay a family wage and lead to upward mobility. Economic development efforts have attracted new industries to Polk that offer good paying jobs and opportunities for advancement, industries such as transportation and logistics, health, manufacturing, and financial services, all requiring an educated employment pool. Polk State is passionate about preparing its students to thrive in this new economy, and its graduates excel!

The College has grown significantly since 2006 in both enrollment and course delivery options to now offer online, hybrid, and face-to-face courses in addition to small class sizes, affordable tuition, and alternative course schedules. The average age of degree seeking students is 26 with a preponderance of part-time enrollment (74%). Approximately 62% of students received financial aid awards in the 2013-14 academic year and 73% of students live within Polk County. Polk State College is regionally accredited by the Southern Association of Colleges Commission on Colleges.

Polk State students graduating with an Associate in Arts degree successfully transfer to a bachelor's degree program at one of the highest rates in the Florida College System. Graduates of its Associate in Science programs get jobs quicker and earn more in their first year of employment than graduates from any other Florida public colleges (Schneider, 2014). The increased earnings of Polk State graduates and alumni boost the economy by $443 million each year according to an economic impact study done by Economic Modeling Specialists Intl. in 2013. With student success central to the organizational mission, Polk State has aligned its strategic direction through innovation, engagement, and value to maintain excellence and quality in current services, while also creating sustainable, dynamic systems to respond to local economic trends.

SETTING THE STAGE

Higher education is generating new energy as a result of a number of disruptive innovative agents that while not "new" have acted as a catalyst to transform program and content delivery, enrollment and registration practices, financial aid, instructor roles and the technology systems required to support these models. While Christensen's discussion of disruption in educational environments identifies online delivery as a means of attending to individual learner needs in K-12 and higher education (Christensen, Johnson, & Horn, 2010; Christensen & Eyring, 2011), it is posited here that online is merely one variable of many that may leverage the impact of competency based education models to enable educational institutions to transform existing systems. Technology tools, such as online mechanisms, provide a medium for instructional delivery; however, this does not necessarily begin to unravel the threads that have bound higher education to collective versus individual learning needs.

This chapter provides a case study of a program that begins to untangle the web of systems, assumptions, roles, relationships, and interagency processes to address the national emphasis on affordable, compressed and flexible degree attainment, particularly in science, technology, engineering, and math (STEM) talent gap areas (Klein-Collins & Baylor, 2013; Kelchen, 2015; Lumina Foundation, 2014; Weise, 2014). At Polk State College, the process of implementation of technological, pedagogical, structural, and support for the program innovation, required ongoing dialogue across departments, flexibility and

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